

### Trend Study 13A-9-99

Study site name: Taylor Flat.

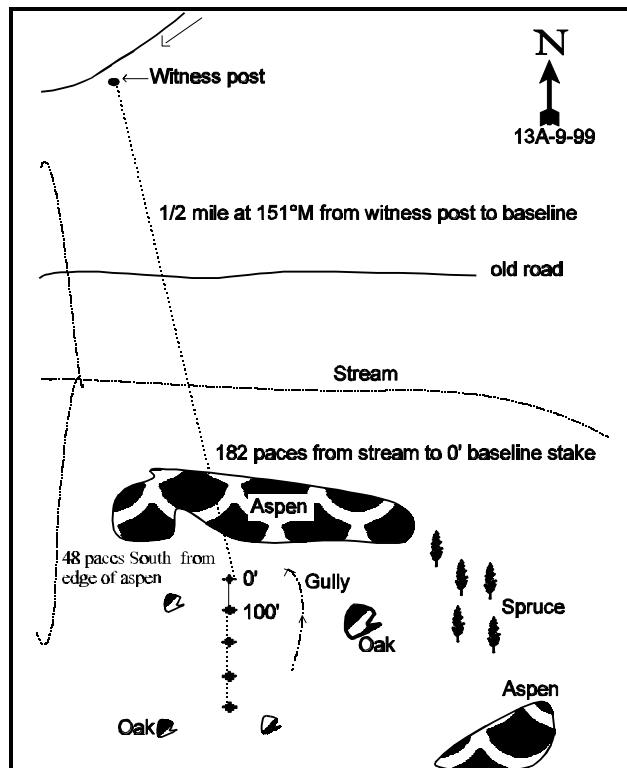
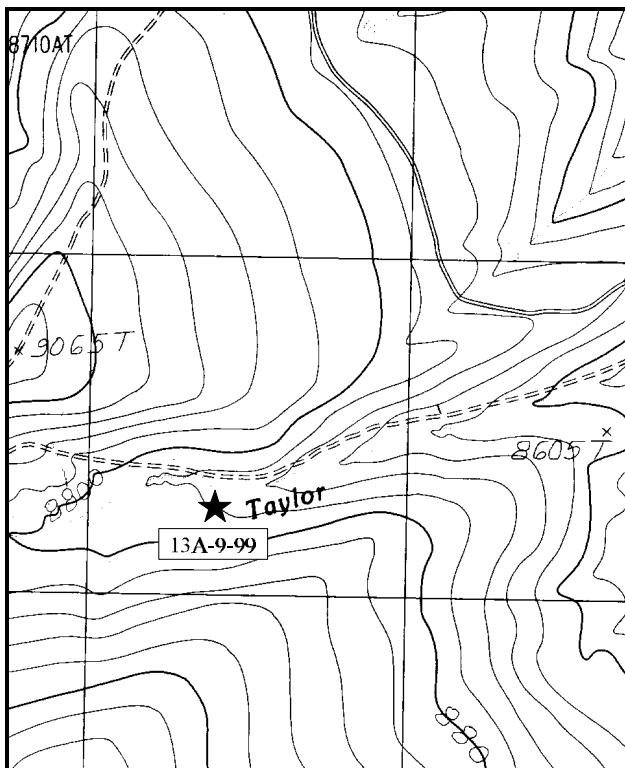
Range type: Snowberry.

Compass bearing: frequency baseline 165°M.

Footmark (first frame placement) 5 feet, footmarks (frequency belts) line 1 (11 & 95ft), line 2 (34ft), line 3 (59ft), line 4 (71ft).

#### LOCATION DESCRIPTION

From the intersection of the LaSal Mountain Loop Road and the Gateway Road at the upper end of Castle Valley, travel 12.7 miles towards Gateway, Colorado to the Sally Hollow turnoff. Turn right and go 0.55 miles to a fork. Turn right off the main road and go 1.3 miles to the top of a little knob. Stay straight at the fork and continue 0.15 miles to a witness post. From here, you can see the area of the transect on the ridge to the south. It is located about half way up the slope just above a large patch of aspens. From the witness post, walk approximately one-half mile down the slope, across a stream and up the other side at a bearing of 151°M.



Map Name: Mount Waas

Township 26S, Range 25E, Section 16

Diagrammatic Sketch

UTM 4267847.441 N, 659765.227 E

## DISCUSSION

### Trend Study No. 13A-9 (33-9)

The Taylor Flat study is located on the slopes above Taylor Flat, in the headwaters of Taylor Creek. It is considered an important big game summer range, especially for elk as a calving area. It is on the large block of state land on the northeast side of the LaSal Mountains. The area is grazed by cattle, horses, and sheep on a rotation system. Pellet group studies done on the immediate area showed 11 elk days use/acre (27 edu/ha) and 23 cow days use/acre (57 cdu/ha). The vegetation on these slopes is predominately a mixture of aspen, clumps of oak, and open meadows dominated by snowberry or Rocky Mountain iris. The snowberry-forb type sampled by the study is on a 5-11% northwest-facing slope at an elevation of 9,000 feet.

The soil is a moderately deep (effective rooting depth of almost 20 inches) clay loam with a high percentage of rock. It is a moderately acidic soil with a pH of 5.9. The sandstone rock varies in size from small cobbles in the surface layer to large lichen-covered boulders. Several gullies on the hillside show evidence of continued soil loss, as does the stream in the valley bottom with recent cutting and bank losses. The soil has a rather high erosion potential. However, current soil protection is adequate to keep soil movement to a minimum except within the already established gullies.

Snowberry is the dominant shrub on the site, contributing 73% of the browse cover in 1994 and 1999. More than 80% of the population are mature plants with most showing only light use. No large, mature oak clumps were sampled, but some young trees are increasing into the open areas. The mature plants do not produce much available forage, but the young available sprouts are often browsed. The other shrubs sampled include Woods rose and shrubby cinquefoil which appear to have young increasing populations.

The herbaceous understory is very dense and diverse, contributing an average of 77% of the total vegetative cover at the site. There are 16 species of grasses on the site, with Thurber fescue and Kentucky bluegrass providing on average 63% of the grass cover. Forbs dominate the herbaceous understory providing an average 64% of the herbaceous cover. More than 30 species of forbs were sampled on the transect in 1999. The more palatable forbs such as dandelion, peavine, lupine, and Oregon fleabane had been selectively grazed by elk. The iris, a very common increaser on this site, is considered worthless as a forage plant and poisonous to livestock. In many places this vigorously spreading rhizomatous plant is becoming quite dense. Overall, the forb and grass population is vigorous, diverse, and dense keeping percent bare ground low at only about 3%. The major concern with this site is that 76% of the herbaceous cover is provided by increaser weedy species.

The dense herbaceous understory certainly helps stabilize the soil on this hillside. Vegetative cover is excellent on this site with litter cover at 65%. Most of the bare soil is caused by burrowing mammals.

### 1994 TREND ASSESSMENT

Soil trend for this site is stable with excellent vegetative cover and litter cover and very little bare soil. Much of the eroding gullies will probably have to have some kind of treatment to stabilize them. The browse trend is stable, but not key for this summer range. The trend for grasses is slightly improved, while the trend for the forbs is slightly down with the extended drought since 1985.

#### TREND ASSESSMENT

soil - stable

browse - stable

herbaceous understory - stable for grasses and slightly down for forbs, overall trend is stable

## 1999 TREND ASSESSMENT

Soil trend for this site is slightly improved with increases in litter cover and vegetative cover and a decrease in percent bare soil. Many of the eroding gullies should probably have some kind of treatment to help stabilize them. The browse trend is stable, but not key for this summer range. The trend for grasses is stable, while the trend for the forbs is slightly up from the nested values of 1994 and forbs make up 69% of the herbaceous cover.

### TREND ASSESSMENT

soil - slightly improved

browse - stable

herbaceous understory - stable for grasses and slightly up for forbs, overall trend is stable to slightly up

### HERBACEOUS TRENDS --

Herd unit 13A, Study no: 9

T y p e	Species	Nested Frequency			Quadrat Frequency			Average Cover %	
		'87	'94	'99	'87	'94	'99	'94	'99
G	<i>Agropyron trachycaulum</i>	a62	ab65	b91	25	29	42	.49	.96
G	<i>Bromus anomalus</i>	a-	ab3	b22	-	3	9	.04	.72
G	<i>Bromus carinatus</i>	b88	a7	a26	34	2	12	.01	.19
G	<i>Carex</i> spp.	b108	a65	a55	41	24	24	1.28	.89
G	<i>Danthonia californica</i>	a-	b51	a-	-	21	-	.73	-
G	<i>Festuca ovina</i>	a30	c88	b51	13	35	19	1.69	1.11
G	<i>Festuca thurberi</i>	a-	b127	b107	-	46	40	8.10	3.51
G	<i>Koeleria cristata</i>	a-	b24	a5	-	10	2	.10	.03
G	<i>Melica</i> spp.	b13	a-	a-	5	-	-	-	-
G	<i>Muhlenbergia</i> spp.	a-	a-	b13	-	-	6	-	.06
G	<i>Phleum alpinum</i>	a-	ab1	b5	-	1	3	.00	.04
G	<i>Phleum pratense</i>	32	35	37	11	14	15	.70	.80
G	<i>Poa arida</i>	c265	b85	a33	104	30	14	2.69	.75
G	<i>Poa pratensis</i>	a33	b170	c277	10	53	82	4.01	9.52
G	<i>Sitanion hystrix</i>	a-	b8	ab3	-	4	1	.04	.00
G	<i>Stipa columbiana</i>	a-	b9	ab2	-	5	1	.24	.04
G	<i>Stipa comata</i>	a3	b16	a-	1	6	-	.15	-
G	<i>Stipa lettermani</i>	a-	b25	c46	-	8	15	.11	1.61
Total for Annual Grasses		0	0	0	0	0	0	0	0
Total for Perennial Grasses		634	779	773	244	291	285	20.44	20.27
Total for Grasses		634	779	773	244	291	285	20.44	20.27
F	<i>Achillea millefolium</i>	b231	a171	b237	79	70	85	1.77	4.91
F	<i>Agoseris glauca</i>	-	6	4	-	2	2	.01	.18
F	<i>Allium geyeri</i>	b93	a11	a8	41	5	4	.03	.04

Type	Species	Nested Frequency			Quadrat Frequency			Average Cover %	
		'87	'94	'99	'87	'94	'99	'94	'99
F	Antennaria parvifolia	b74	a21	a24	29	8	12	.28	.47
F	Androsace septentrionalis (a)	-	a1	b20	-	1	8	.00	.04
F	Arabis spp.	b13	a-	a4	7	-	2	-	.03
F	Arenaria congesta	b107	ab82	a59	42	36	28	1.03	.36
F	Aster spp.	a-	b34	c75	-	14	35	.29	1.35
F	Calochortus gunnisoni	21	13	21	12	6	10	.03	.08
F	Castilleja linariaefolia	-	-	3	-	-	1	-	.03
F	Cerastium arvense	b92	b92	a35	43	35	16	.40	1.24
F	Cirsium spp.	-	-	-	-	-	-	.00	.03
F	Clematis hirsutissima	1	1	-	1	1	-	.03	-
F	Comandra pallida	27	22	32	13	9	13	.09	.26
F	Crepis acuminata	b25	a-	b7	10	-	3	-	.04
F	Cruciferae	b28	a1	a-	12	1	-	.00	-
F	Delphinium nuttallianum	b42	a-	a-	22	-	-	-	-
F	Epilobium brachycarpum (a)	-	-	2	-	-	1	-	.03
F	Eriogonum elatum	-	2	-	-	1	-	.00	-
F	Erigeron flagellaris	a13	a8	b48	6	6	19	.08	1.31
F	Erigeron spp.	b102	b40	a-	43	15	-	.66	-
F	Eriogonum racemosum	b6	ab5	a-	3	2	-	.06	-
F	Erigeron speciosus	ab132	b141	a100	53	55	40	1.29	2.56
F	Galium boreale	b164	a106	ab128	60	43	48	.93	.73
F	Geranium caespitosum	11	12	20	9	7	10	.14	.22
F	Haplopappus croceus	b13	a-	a-	6	-	-	-	-
F	Helenium hoopesii	a-	b46	b55	-	20	28	1.34	2.45
F	Heuchera parvifolia	11	19	16	5	7	9	.18	.24
F	Iris missouriensis	a115	b215	b227	44	74	77	11.19	11.29
F	Lathyrus lanszwertii	b183	a125	b179	70	46	66	2.30	5.34
F	Lewisia pygmaea	b6	ab1	a-	3	1	-	.00	-
F	Linum lewisii	12	5	10	5	4	6	.02	.11
F	Lomatium spp.	b58	ab45	a25	32	22	13	.19	.19
F	Lupinus argenteus	8	12	5	6	6	2	.34	.18
F	Lupinus sericeus	b30	a4	a-	12	2	-	.03	-
F	Osmorrhiza spp.	2	-	-	2	-	-	-	-
F	Penstemon spp.	b22	a-	a-	13	-	-	-	-
F	Phacelia spp.	b6	a-	a-	4	-	-	-	-
F	Potentilla anersina	-	-	3	-	-	1	-	.00
F	Polygonum douglasii (a)	-	b10	a-	-	5	-	.02	-
F	Potentilla gracilis	b116	ab97	a72	49	43	34	.90	.80
F	Senecio integerrimus	b135	a6	25	60	2	13	.03	.15
F	Sedum lanceolatum	b25	a-	a-	10	-	-	-	-

T y p e	Species	Nested Frequency			Quadrat Frequency			Average Cover %	
		'87	'94	'99	'87	'94	'99	'94	'99
F	Taraxacum officinale	b262	a187	a226	86	67	79	3.15	7.36
F	Thlaspi spp.	-	-	3	-	-	1	-	.00
F	Thermopsis montana	25	47	24	9	17	11	2.26	2.18
F	Tragopogon dubius	3	5	-	2	2	-	.01	-
F	Unknown forb-perennial	138	-	-	62	-	-	-	-
F	Vicia americana	b61	a27	a32	25	13	14	.17	.48
F	Wyethia amplexicaulis	6	1	-	2	1	-	.00	-
Total for Annual Forbs		0	11	22	0	6	9	0.03	0.07
Total for Perennial Forbs		2419	1610	1707	992	643	682	29.36	44.74
Total for Forbs		2419	1621	1729	992	649	691	29.39	44.81

Values with different subscript letters are significantly different at % = 0.10

#### BROWSE TRENDS --

Herd unit 13A, Study no: 9

T y p e	Species	Strip Frequency		Average Cover %	
		'94	'99	'94	'99
B	Amelanchier utahensis	1	4	-	.06
B	Chrysothamnus viscidiflorus	0	0	-	-
B	Potentilla fruticosa	17	18	1.81	2.14
B	Quercus gambelii	0	18	2.04	2.48
B	Rosa woodsii	16	12	.23	.30
B	Symphoricarpos oreophilus	76	76	10.98	13.53
Total for Browse		110	128	15.07	18.52

#### CANOPY COVER --

Herd unit 13A, Study no: 9

Species	Percent Cover '99
Quercus gambelii	2

#### BASIC COVER --

Herd unit 13A, Study no: 9

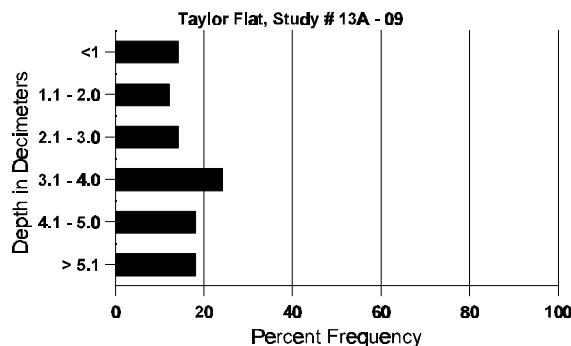
Cover Type	Nested Frequency		Average Cover %		
	'94	'99	'87	'94	'99
Vegetation	388	392	21.25	62.43	75.76
Rock	69	62	7.25	3.33	4.00
Pavement	15	35	0	.03	.22
Litter	373	384	60.50	49.25	64.97
Cryptogams	13	55	.75	.07	1.87
Bare Ground	179	95	10.25	7.42	3.17

SOIL ANALYSIS DATA --

Herd Unit 13A, Study # 09, Study Name: Taylor Flat

Effective rooting depth (cm)	Temp °F (depth)	pH	%sand	%silt	%clay	%OM	PPM P	PPM K	dS/m
19.2	48.6 (18.1)	5.9	34.9	27.8	37.3	5.5	9.2	188.8	0.4

### Stoniness Index



PELLET GROUP DATA --

Herd unit 13A, Study no: 9

Type	Quadrat Frequency		Pellet Transect Days Use/Acre (ha) '99
	'94	'99	
Rabbit	1	-	N/A
Elk	4	7	11 (27)
Deer	1	2	0
Cattle	-	6	23 (57)

BROWSE CHARACTERISTICS --

Herd unit 13A, Study no: 9

A G E	Y	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.	Total									
		1	2	3	4	5	6	7	8	9	1	2	3	4												
<b>Amelanchier utahensis</b>																										
Y	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0									
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0									
	99	-	2	-	-	-	-	-	-	-	2	-	-	-	40		2									
M	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-									
	94	1	-	-	-	-	-	-	-	-	1	-	-	-	20	17	18									
	99	-	1	1	-	-	-	-	-	-	2	-	-	-	40	15	16									
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>															
'87		00%			00%			00%			+75%															
'94		00%			00%			00%																		
'99		75%			25%			00%																		
Total Plants/Acre (excluding Dead & Seedlings)												'87	0	Dec:	-											
												'94	20		-											
												'99	80		-											

A G R E	Y	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.	Total
		1	2	3	4	5	6	7	8	9	1	2	3	4			
Chrysothamnus viscidiflorus																	
M	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0	15	23
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>				<u>%Change</u>					
	'87	00%			00%			00%									
	'94	00%			00%			00%									
	'99	00%			00%			00%									
Total Plants/Acre (excluding Dead & Seedlings)												'87	0	Dec:	-		
												'94	0		-		
												'99	0		-		
Potentilla fruticosa																	
S	87	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	99	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1
Y	87	3	-	-	-	-	-	-	-	-	3	-	-	-	200		3
	94	9	-	-	3	-	-	2	-	-	14	-	-	-	280		14
	99	13	-	-	-	-	-	-	-	-	13	-	-	-	260		13
M	87	1	-	-	-	-	-	-	-	-	1	-	-	-	66	18 15	1
	94	25	-	-	-	-	-	-	-	-	25	-	-	-	500	15 28	25
	99	34	-	-	-	-	-	-	-	-	34	-	-	-	680	16 27	34
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>				<u>%Change</u>					
	'87	00%			00%			00%									
	'94	00%			00%			00%									
	'99	00%			00%			00%									
Total Plants/Acre (excluding Dead & Seedlings)												'87	266	Dec:	-		
												'94	780		-		
												'99	940		-		

A G R E	Y	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.	Total
		1	2	3	4	5	6	7	8	9	1	2	3	4			
Quercus gambelii																	
S	87	25	-	-	-	-	-	-	-	-	25	-	-	-	1666		25
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	99	3	-	-	-	-	-	-	-	-	3	-	-	-	60		3
Y	87	44	3	1	-	-	-	-	-	-	48	-	-	-	3200		48
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	99	4	-	-	16	-	-	15	-	-	35	-	-	-	700		35
M	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
	99	15	2	-	-	-	-	-	11	-	27	-	1	-	560	54	34
D	87	1	-	1	-	-	-	-	-	-	2	-	-	-	133		2
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	99	-	-	-	-	-	-	-	-	-	-	-	-	2	40		2
X	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	80		4
% Plants Showing			<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>					
	'87	06%		04%		00%											
	'94	00%		00%		00%											
	'99	03%		00%		05%											
Total Plants/Acre (excluding Dead & Seedlings)												'87	3333	Dec:	4%		
												'94	0		0%		
												'99	1300		3%		
Rosa woodsii																	
S	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	99	5	-	-	-	-	-	-	-	-	5	-	-	-	100		5
Y	87	12	-	-	-	-	-	-	-	-	12	-	-	-	800		12
	94	8	-	-	6	-	-	1	-	-	15	-	-	-	300		15
	99	18	-	-	-	-	-	-	-	-	18	-	-	-	360		18
M	87	1	-	-	-	-	-	-	-	-	1	-	-	-	66	15	1
	94	19	-	-	3	-	-	-	-	-	22	-	-	-	440	12	22
	99	5	-	-	1	-	-	-	-	-	6	-	-	-	120	16	6
% Plants Showing			<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>					
	'87	00%		00%		00%										-15%	
	'94	00%		00%		00%										-35%	
	'99	00%		00%		00%											
Total Plants/Acre (excluding Dead & Seedlings)												'87	866	Dec:	-		
												'94	740		-		
												'99	480		-		

A G E	Y	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.	Total									
		1	2	3	4	5	6	7	8	9	1	2	3	4												
Symphoricarpos oreophilus																										
S	87	11	-	-	-	-	-	-	-	-	11	-	-	-	733		11									
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0									
	99	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1									
Y	87	64	11	-	-	-	-	-	-	-	72	1	2	-	5000		75									
	94	22	-	-	-	-	-	-	-	-	22	-	-	-	440		22									
	99	25	1	-	-	-	-	-	-	-	26	-	-	-	520		26									
M	87	32	52	2	-	-	-	-	-	-	84	-	2	-	5733	22 32	86									
	94	190	-	2	-	-	-	-	1	-	193	-	-	-	3860	16 25	193									
	99	159	12	-	6	-	-	-	-	-	176	-	1	-	3540	18 30	177									
D	87	2	-	-	-	-	-	-	-	-	2	-	-	-	133		2									
	94	1	-	-	2	-	-	-	-	-	1	-	-	2	60		3									
	99	1	-	-	-	-	-	-	-	-	-	-	-	1	20		1									
% Plants Showing			<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>														
'87			39%			01%			02%			-60%														
'94			00%			.91%			.91%			- 6%														
'99			06%			00%			.98%																	
Total Plants/Acre (excluding Dead & Seedlings)												'87	10866	Dec:	1%											
												'94	4360		1%											
												'99	4080		0%											